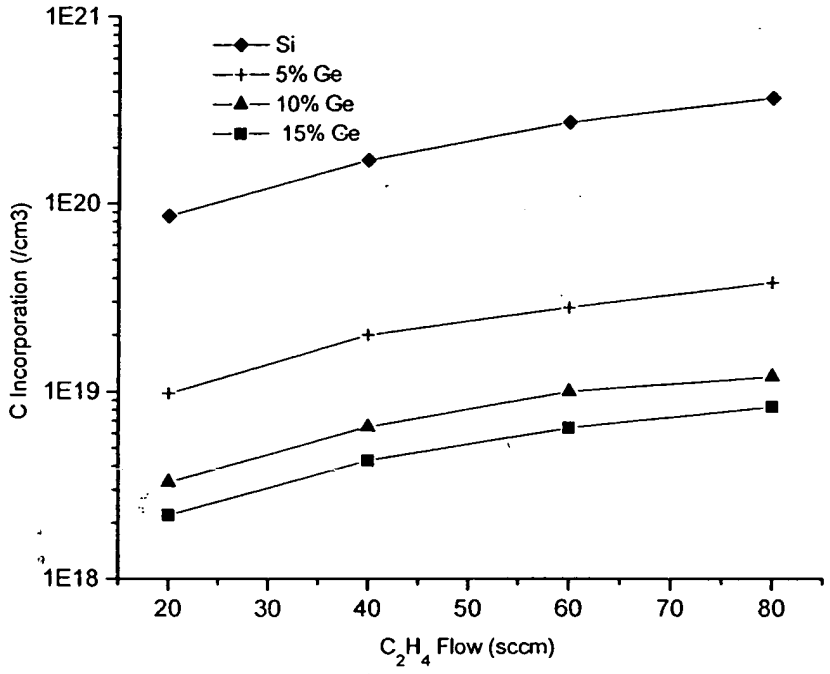
1E21
1E20
1E19
1E18
C Incorporation (/cm3)
Si
5% Ge
10% Ge
15% Ge
20
30
40
50
60
70
80
C2H4 Flow (sccm)

Fig.1

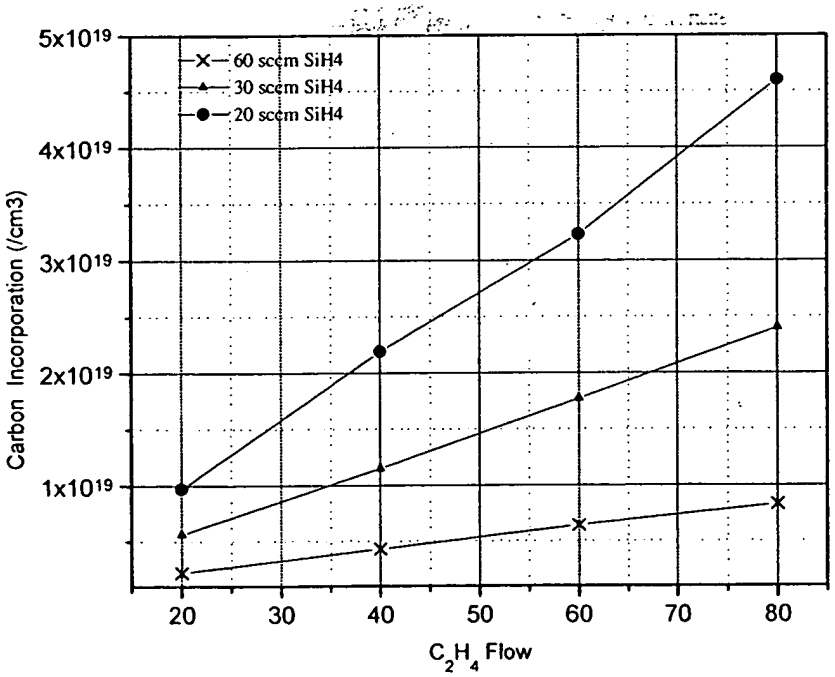
5x10^19
4x10^19
3x10^19
2x10^19
1x10^19
Carbon Incorporation (/cm3)
60 sccm SiH4
30 sccm SiH4
20 sccm SiH4
20
30
40
50
60
70
80
C2H4 Flow

Fig.2

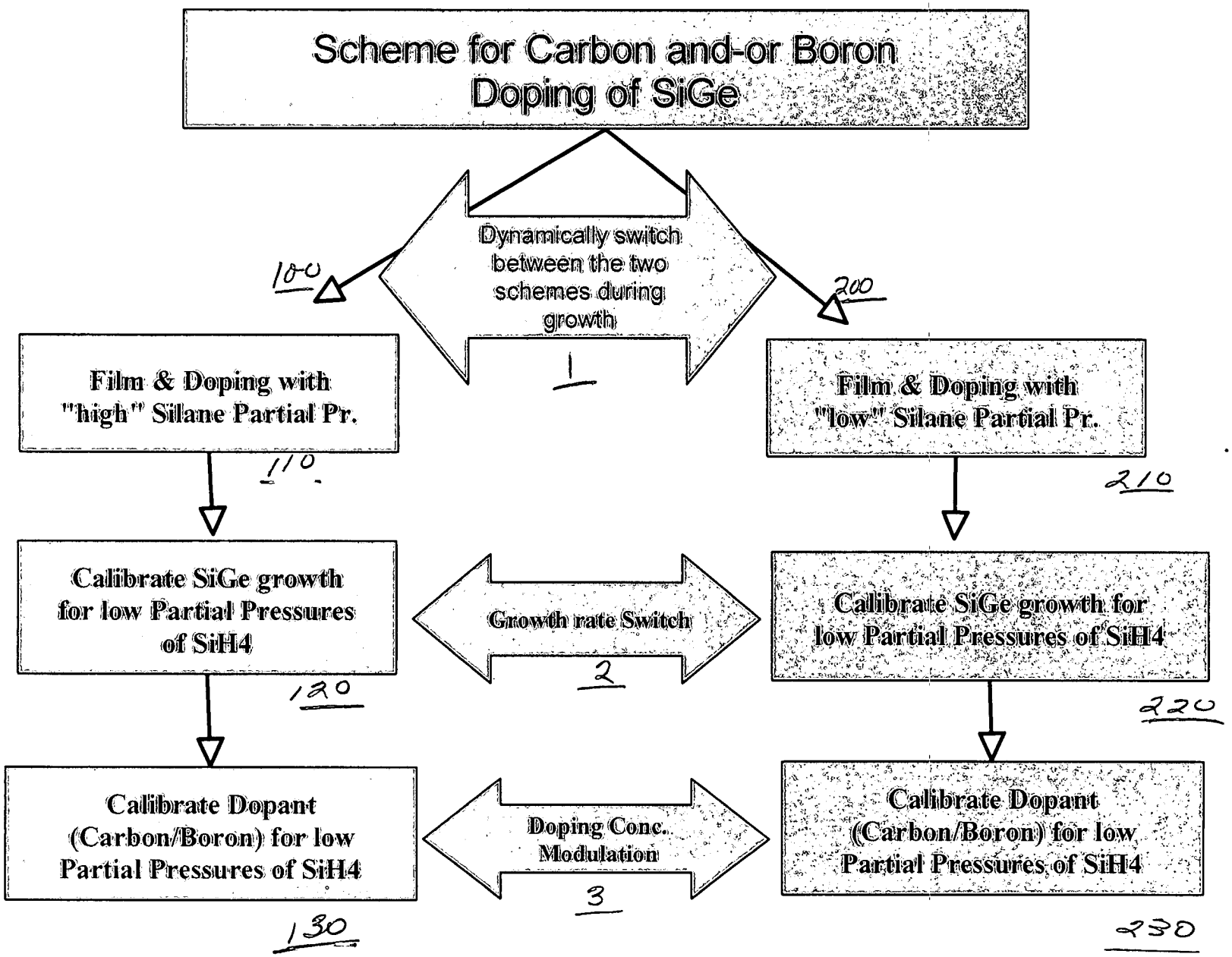
Scheme for Carbon and-or Boron Doping of SiGe
Dynamically switch between the two schemes during growth
1
100
200
Film & Doping with "high" Silane Partial Pr.
110
Film & Doping with "low" Silane Partial Pr.
210
Calibrate SiGe growth for low Partial Pressures of SiH4
120
Growth rate Switch
2
Calibrate SiGe growth for low Partial Pressures of SiH4
220
Calibrate Dopant (Carbon/Boron) for low Partial Pressures of SiH4
130
Doping Conc. Modulation
3
Calibrate Dopant (Carbon/Boron) for low Partial Pressures of SiH4
230

FIG. 3

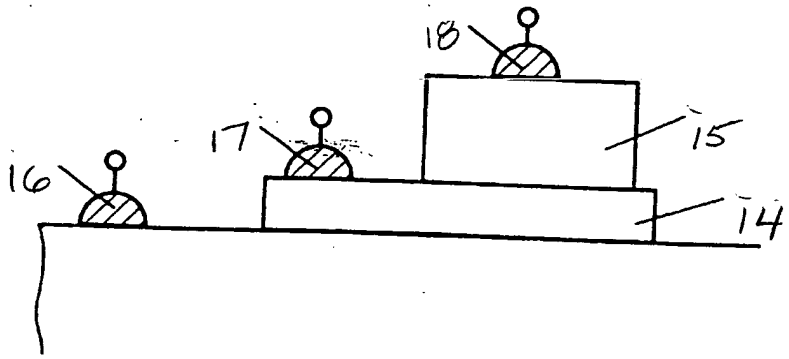

FIG. 4

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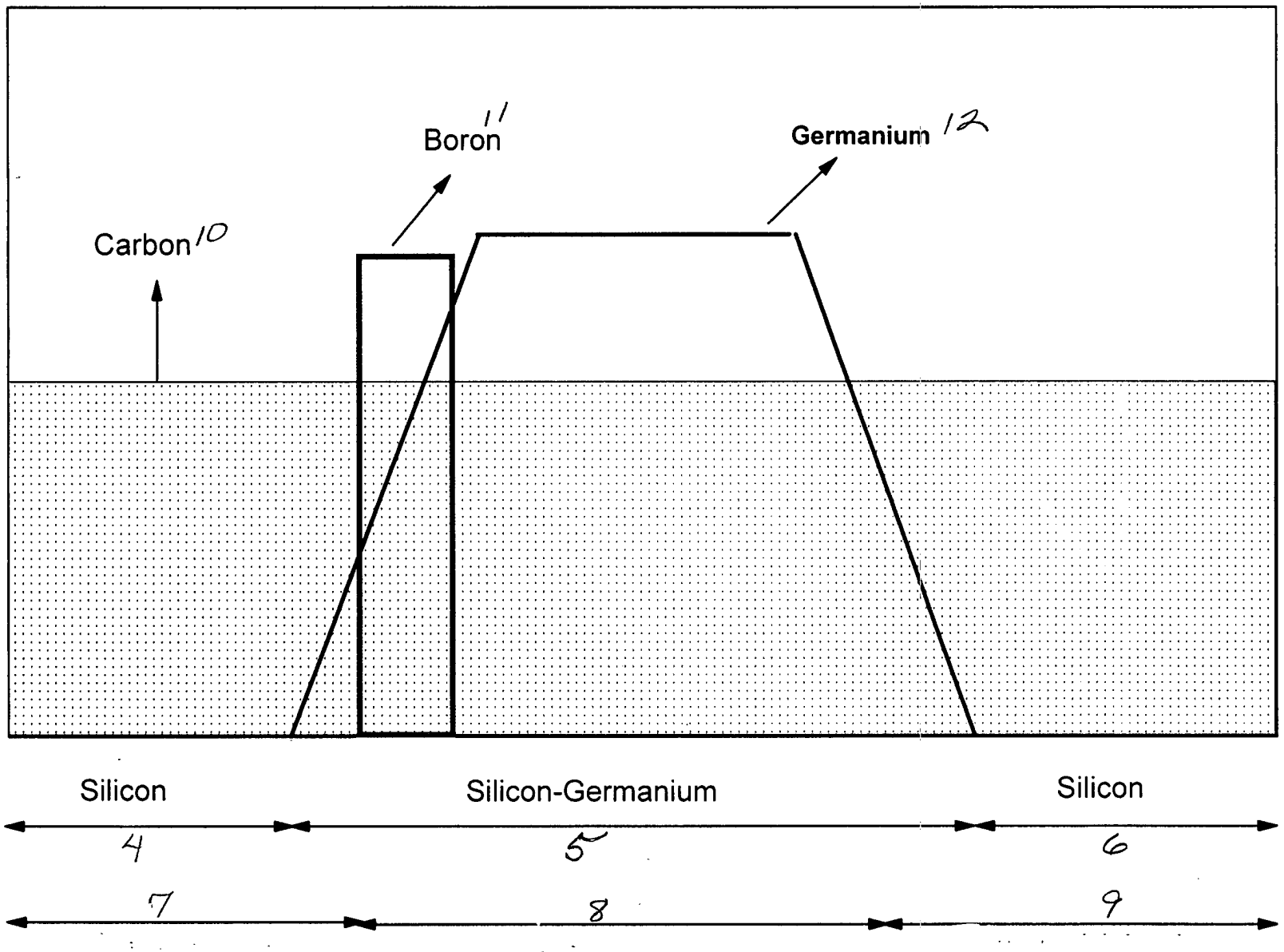

FIG. 5